

CRF Errors Corrected by the STIC Systems Branch

Serial Number: 10/047,593

CRF Processing Date: 2/14/2002
 Edited by: A
 Verified by: A (STIC staff)

ENTERED

☐ Changed a file from non-ASCII to ASCII

☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.

☐ Edited a format error in the Current Application Data section, specifically:

☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____

☐ Added the mandatory heading and subheadings for "Current Application Data".

☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.

☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically:

☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were:

☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.

☐ Inserted colons after headings/subheadings. Headings edited included:

☐ Deleted extra, invalid, headings used by an applicant, specifically:

☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/filename at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____

☐ Inserted mandatory headings, specifically: _____

☐ Corrected an obvious error in the response, specifically:

☐ Edited identifiers where upper case is used but lower case is required, or vice versa.

☐ Corrected an error in the Number of Sequences field, specifically:

☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.

☐ Deleted *ending* stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____

☒ Other:

inserted hard return globally

*Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

3/1/95



OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/047,593

DATE: 02/14/2002

TIME: 20:21:33

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\02142002\J047593.raw

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4 <110> APPLICANT: Crane, Edmund H. III
5   Rice, Douglas A.
7 <120> TITLE OF INVENTION: Maize NPR1 Polynucleotides and Methods
8   of Use
10 <130> FILE REFERENCE: 1090D2
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/047,593
C--> 12 <141> CURRENT FILING DATE: 2002-01-15
12 <150> PRIOR APPLICATION NUMBER: 60/130,692
13 <151> PRIOR FILING DATE: 1999-04-23
15 <150> PRIOR APPLICATION NUMBER: 09/551,778
16 <151> PRIOR FILING DATE: 2000-04-18
18 <160> NUMBER OF SEQ ID NOS: 6
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 2154
24 <212> TYPE: DNA
25 <213> ORGANISM: Zea mays
27 <220> FEATURE:
28 <221> NAME/KEY: CDS
29 <222> LOCATION: (67)...(1929)
31 <221> NAME/KEY: 3'UTR
32 <222> LOCATION: (1933)...(2154)
34 <221> NAME/KEY: 5'UTR
35 <222> LOCATION: (1)...(66)
37 <400> SEQUENCE: 1
38 gtcgtagtggtg tccgggtccg gcacaagtag gggctcgcgt cttgcgcttg gcagttgtgg      60
39 gaagcc atg gag ccg tcg tcg tcc atc acg ttc gcg tcg tcg tcg tcg      108
40   Met Glu Pro Ser Ser Ser Ile Thr Phe Ala Ser Ser Ser Ser
41       1           5           10
43 tac ctg tcc aac ggc tcg agc ccc tgt tcc gtc gcg ctg ccg ccg cca      156
44 Tyr Leu Ser Asn Gly Ser Ser Pro Cys Ser Val Ala Leu Pro Pro Pro
45 15           20           25           30
47 ggg ccg ccc cag act ccc ccg ttg cct gcc ggc cag ggg tgg ggt ggt      204
48 Gly Pro Pro Gln Thr Pro Pro Leu Pro Ala Gly Gln Gly Trp Gly Gly
49           35           40           45
51 gga gtc gct gcc gca ggg agc gga ggc agc gtg gag gcc gtg agc ctg      252
52 Gly Val Ala Ala Ala Gly Ser Gly Gly Ser Val Glu Ala Val Ser Leu
53       50           55           60
55 aac cgg ctc agc aaa aac ctc gag cgg ctg ctc ctc gac ccg gac cta      300
56 Asn Arg Leu Ser Lys Asn Leu Glu Arg Leu Leu Leu Asp Pro Asp Leu
57       65           70           75
59 gac tgc agc gac gcc gac gtc gat gtg ccc gac ggt ggg ccg ccc gta      348
60 Asp Cys Ser Asp Ala Asp Val Asp Val Pro Asp Gly Gly Pro Pro Val

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RAW SEQUENCE LISTING

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DATE: 02/14/2002

TIME: 20:21:33

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\02142002\J047593.raw

61	80	85	90	
63	ccc atc cac cgc tgc atc ctt gcc gca cgc agc gac ttc ttc tac gac			396
64	Pro Ile His Arg Cys Ile Leu Ala Ala Arg Ser Asp Phe Phe Tyr Asp			
65	95	100	105	110
67	ctc ttc gcc gct cgc ggc cgc gca ggg gca gcg cgc ggt gat gcg gcc			444
68	Leu Phe Ala Ala Arg Gly Arg Ala Gly Ala Ala Arg Gly Asp Ala Ala			
69		115	120	125
71	gcc ggc gcc gga gta gcc gcg gag ggg gct gcc agt gga agg ccg cgg			492
72	Ala Gly Ala Gly Val Ala Ala Glu Gly Ala Ala Ser Gly Arg Pro Arg			
73		130	135	140
75	tac aag atg gag gat ctc gtt ccc gcc ggc cgc gtg ggg cgc gag gcc			540
76	Tyr Lys Met Glu Asp Leu Val Pro Ala Gly Arg Val Gly Arg Glu Ala			
77		145	150	155
79	ttc cag gcg ttt ctg ggg tac ctg tac acc ggc aag ctc cgg ccg gca			588
80	Phe Gln Ala Phe Leu Gly Tyr Leu Tyr Thr Gly Lys Leu Arg Pro Ala			
81		160	165	170
83	ccg gtc gac gtg gtg tct tgt gct gac cca gtg tgc cat cac gat tcg			636
84	Pro Val Asp Val Val Ser Cys Ala Asp Pro Val Cys His His Asp Ser			
85	175	180	185	190
87	tgc ccg ccg gcc atc agg tcc gcg gtc gag ctc atg tac gcg gcg tgt			684
88	Cys Pro Pro Ala Ile Arg Ser Ala Val Glu Leu Met Tyr Ala Ala Cys			
89		195	200	205
91	acc ttc aag atc ccc gag ctc acc tcg ctc ttc cag cgc cgg ctt ctt			732
92	Thr Phe Lys Ile Pro Glu Leu Thr Ser Leu Phe Gln Arg Arg Leu Leu			
93		210	215	220
95	aat ttt gta gac aag act cta gtg gag gat gtt att cct att ctg gaa			780
96	Asn Phe Val Asp Lys Thr Leu Val Glu Asp Val Ile Pro Ile Leu Glu			
97		225	230	235
99	gtt gct tcc cac tca ggg ctg act caa gtg atc gac aaa tgt att caa			828
100	Val Ala Ser His Ser Gly Leu Thr Gln Val Ile Asp Lys Cys Ile Gln			
101		240	245	250
103	agg att gct aga tca gat ctc gac gat ata tct ttg gat aag gag ctc			876
104	Arg Ile Ala Arg Ser Asp Leu Asp Asp Ile Ser Leu Asp Lys Glu Leu			
105	255	260	265	270
107	cct cca gaa gca gtt gat gag ata aaa aat ttg cgc aag aag tca caa			924
108	Pro Pro Glu Ala Val Asp Glu Ile Lys Asn Leu Arg Lys Lys Ser Gln			
109		275	280	285
111	act gct gat ggt gat acg ttc att tcg gac cct gtg cat gag aaa aga			972
112	Thr Ala Asp Gly Asp Thr Phe Ile Ser Asp Pro Val His Glu Lys Arg			
113		290	295	300
115	gtc aga aga atc cac agg gca ctt gac tct gat gat gtt gag ctt gtg			1020
116	Val Arg Arg Ile His Arg Ala Leu Asp Ser Asp Asp Val Glu Leu Val			
117		305	310	315
119	aag ttg ctt ctt aat gag tcc gac atc aca tta gat gat gcc aac gca			1068
120	Lys Leu Leu Leu Asn Glu Ser Asp Ile Thr Leu Asp Asp Ala Asn Ala			
121		320	325	330
123	tta cac tat gct gct tct tac tgt gat cct aaa gtt gtc tca gag ctg			1116
124	Leu His Tyr Ala Ala Ser Tyr Cys Asp Pro Lys Val Val Ser Glu Leu			
125	335	340	345	350

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DATE: 02/14/2002

TIME: 20:21:33

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\02142002\J047593.raw

127	tta gat ttg gca atg gct aac tta aat ttg aag aat agc cgt ggg tac	1164
128	Leu Asp Leu Ala Met Ala Asn Leu Asn Leu Lys Asn Ser Arg Gly Tyr	
129	355 360 365	
131	aca gca ctc cac ttg gct gct atg agg aga gaa cca gct ata atc atg	1212
132	Thr Ala Leu His Leu Ala Ala Met Arg Arg Glu Pro Ala Ile Ile Met	
133	370 375 380	
135	tgt ctc ctt aac aaa ggg gca aat gtg tca caa ctg aca gct gat ggc	1260
136	Cys Leu Leu Asn Lys Gly Ala Asn Val Ser Gln Leu Thr Ala Asp Gly	
137	385 390 395	
139	agg agc gca att ggt att tgt cgg agg tta aca aga gca aaa gac tac	1308
140	Arg Ser Ala Ile Gly Ile Cys Arg Arg Leu Thr Arg Ala Lys Asp Tyr	
141	400 405 410	
143	aat aca aag atg gag cag ggt caa gaa tca aat aaa gat agg ctg tgt	1356
144	Asn Thr Lys Met Glu Gln Gly Gln Glu Ser Asn Lys Asp Arg Leu Cys	
145	415 420 425 430	
147	ata gat att cta gag agg gag atg atg cgg aat cct atg gcg gtg gaa	1404
148	Ile Asp Ile Leu Glu Arg Glu Met Met Arg Asn Pro Met Ala Val Glu	
149	435 440 445	
151	gat gcc gtc acc tcg cct ttg ttg gca gat gat ctt cac atg aag ctt	1452
152	Asp Ala Val Thr Ser Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu	
153	450 455 460	
155	ctc tac ctg gaa aac aga gtt gca ttt gct aga ttg ttc ttt cct gct	1500
156	Leu Tyr Leu Glu Asn Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala	
157	465 470 475	
159	gaa gcc aag gtc gcc atg caa atc gca caa gca gac acc aca gaa gaa	1548
160	Glu Ala Lys Val Ala Met Gln Ile Ala Gln Ala Asp Thr Thr Glu Glu	
161	480 485 490	
163	ttc ggc ggt ata gtt gca gtt gca gca agc act tct ggt aaa ctg agg	1596
164	Phe Gly Gly Ile Val Ala Val Ala Ala Ser Thr Ser Gly Lys Leu Arg	
165	495 500 505 510	
167	gag gtg gac ctt aat gag acg cca gtg aca caa aac aaa agg ctc cgt	1644
168	Glu Val Asp Leu Asn Glu Thr Pro Val Thr Gln Asn Lys Arg Leu Arg	
169	515 520 525	
171	tca agg gta gat gca ctg atg aaa aca gtg gag ctg ggc cgt cgg tac	1692
172	Ser Arg Val Asp Ala Leu Met Lys Thr Val Glu Leu Gly Arg Arg Tyr	
173	530 535 540	
175	ttc ccg aac tgc tcg cag gtg ctg gac aag ttc ctg gag gac gat ctg	1740
176	Phe Pro Asn Cys Ser Gln Val Leu Asp Lys Phe Leu Glu Asp Asp Leu	
177	545 550 555	
179	ccg gaa ggt ctg gac cag ttc tac ctc cag agg ggc aca gcc gat gag	1788
180	Pro Glu Gly Leu Asp Gln Phe Tyr Leu Gln Arg Gly Thr Ala Asp Glu	
181	560 565 570	
183	cag aag gtg aag agg atg cgc ttc tgc gag ctg aaa gag gac gtg ctg	1836
184	Gln Lys Val Lys Arg Met Arg Phe Cys Glu Leu Lys Glu Asp Val Leu	
185	575 580 585 590	
187	aag gcg ttt agc aag gac aag gcg gag ggc agc gtg ttc tcg ggc ctg	1884
188	Lys Ala Phe Ser Lys Asp Lys Ala Glu Gly Ser Val Phe Ser Gly Leu	
189	595 600 605	
191	tcc tcg tcg tcg tcg tgc tcg ccg ccc cag aag tat gcc cag agg	1929

RAW SEQUENCE LISTING

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Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\02142002\J047593.raw

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192 Ser Ser Ser Ser Ser Cys Ser Pro Pro Gln Lys Tyr Ala Gln Arg
193          610          615          620
195 tgatcaaggc accagttttt gccgtatagt ttgttatcat ggtcttcgag acttggaccc 1989
196 ggacagcata tagggacatg tacacctgtg tatgtatagt gcttacaatt ggcgtaagta 2049
197 gaactatatg tatggaacat aaggaaacat ggcaggaaca ccgtgcaaaa agatgaaaag 2109
198 atggccgaag tgctctatgc gaaaaaaaaa aaaaaaaaaa aaaaa 2154
200 <210> SEQ ID NO: 2
201 <211> LENGTH: 621
202 <212> TYPE: PRT
203 <213> ORGANISM: Zea mays
205 <400> SEQUENCE: 2
206 Met Glu Pro Ser Ser Ser Ile Thr Phe Ala Ser Ser Ser Ser Tyr Leu
207 1          5          10          15
208 Ser Asn Gly Ser Ser Pro Cys Ser Val Ala Leu Pro Pro Pro Gly Pro
209          20          25          30
210 Pro Gln Thr Pro Pro Leu Pro Ala Gly Gln Gly Trp Gly Gly Gly Val
211          35          40          45
212 Ala Ala Ala Gly Ser Gly Gly Ser Val Glu Ala Val Ser Leu Asn Arg
213          50          55          60
214 Leu Ser Lys Asn Leu Glu Arg Leu Leu Leu Asp Pro Asp Leu Asp Cys
215 65          70          75          80
216 Ser Asp Ala Asp Val Asp Val Pro Asp Gly Gly Pro Pro Val Pro Ile
217          85          90          95
218 His Arg Cys Ile Leu Ala Ala Arg Ser Asp Phe Phe Tyr Asp Leu Phe
219          100          105          110
220 Ala Ala Arg Gly Arg Ala Gly Ala Ala Arg Gly Asp Ala Ala Ala Gly
221          115          120          125
222 Ala Gly Val Ala Ala Glu Gly Ala Ala Ser Gly Arg Pro Arg Tyr Lys
223          130          135          140
224 Met Glu Asp Leu Val Pro Ala Gly Arg Val Gly Arg Glu Ala Phe Gln
225 145          150          155          160
226 Ala Phe Leu Gly Tyr Leu Tyr Thr Gly Lys Leu Arg Pro Ala Pro Val
227          165          170          175
228 Asp Val Val Ser Cys Ala Asp Pro Val Cys His His Asp Ser Cys Pro
229          180          185          190
230 Pro Ala Ile Arg Ser Ala Val Glu Leu Met Tyr Ala Ala Cys Thr Phe
231          195          200          205
232 Lys Ile Pro Glu Leu Thr Ser Leu Phe Gln Arg Arg Leu Leu Asn Phe
233          210          215          220
234 Val Asp Lys Thr Leu Val Glu Asp Val Ile Pro Ile Leu Glu Val Ala
235 225          230          235          240
236 Ser His Ser Gly Leu Thr Gln Val Ile Asp Lys Cys Ile Gln Arg Ile
237          245          250          255
238 Ala Arg Ser Asp Leu Asp Asp Ile Ser Leu Asp Lys Glu Leu Pro Pro
239          260          265          270
240 Glu Ala Val Asp Glu Ile Lys Asn Leu Arg Lys Lys Ser Gln Thr Ala
241          275          280          285
242 Asp Gly Asp Thr Phe Ile Ser Asp Pro Val His Glu Lys Arg Val Arg
243          290          295          300

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/047,593

DATE: 02/14/2002

TIME: 20:21:33

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\02142002\J047593.raw

```

244 Arg Ile His Arg Ala Leu Asp Ser Asp Asp Val Glu Leu Val Lys Leu
245 305                      310                      315                      320
246 Leu Leu Asn Glu Ser Asp Ile Thr Leu Asp Asp Ala Asn Ala Leu His
247                      325                      330                      335
248 Tyr Ala Ala Ser Tyr Cys Asp Pro Lys Val Val Ser Glu Leu Leu Asp
249                      340                      345                      350
250 Leu Ala Met Ala Asn Leu Asn Leu Lys Asn Ser Arg Gly Tyr Thr Ala
251                      355                      360                      365
252 Leu His Leu Ala Ala Met Arg Arg Glu Pro Ala Ile Ile Met Cys Leu
253                      370                      375                      380
254 Leu Asn Lys Gly Ala Asn Val Ser Gln Leu Thr Ala Asp Gly Arg Ser
255 385                      390                      395                      400
256 Ala Ile Gly Ile Cys Arg Arg Leu Thr Arg Ala Lys Asp Tyr Asn Thr
257                      405                      410                      415
258 Lys Met Glu Gln Gly Gln Glu Ser Asn Lys Asp Arg Leu Cys Ile Asp
259                      420                      425                      430
260 Ile Leu Glu Arg Glu Met Met Arg Asn Pro Met Ala Val Glu Asp Ala
261                      435                      440                      445
262 Val Thr Ser Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu Leu Tyr
263                      450                      455                      460
264 Leu Glu Asn Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala Glu Ala
265 465                      470                      475                      480
266 Lys Val Ala Met Gln Ile Ala Gln Ala Asp Thr Thr Glu Glu Phe Gly
267                      485                      490                      495
268 Gly Ile Val Ala Val Ala Ala Ser Thr Ser Gly Lys Leu Arg Glu Val
269                      500                      505                      510
270 Asp Leu Asn Glu Thr Pro Val Thr Gln Asn Lys Arg Leu Arg Ser Arg
271                      515                      520                      525
272 Val Asp Ala Leu Met Lys Thr Val Glu Leu Gly Arg Arg Tyr Phe Pro
273                      530                      535                      540
274 Asn Cys Ser Gln Val Leu Asp Lys Phe Leu Glu Asp Asp Leu Pro Glu
275 545                      550                      555                      560
276 Gly Leu Asp Gln Phe Tyr Leu Gln Arg Gly Thr Ala Asp Glu Gln Lys
277                      565                      570                      575
278 Val Lys Arg Met Arg Phe Cys Glu Leu Lys Glu Asp Val Leu Lys Ala
279                      580                      585                      590
281 Phe Ser Lys Asp Lys Ala Glu Gly Ser Val Phe Ser Gly Leu Ser Ser
283                      595                      600                      605
285 Ser Ser Ser Cys Ser Pro Pro Gln Lys Tyr Ala Gln Arg
287                      610                      615                      620
288 <210> SEQ ID NO: 3
289 <211> LENGTH: 7789
290 <212> TYPE: DNA
291 <213> ORGANISM: Zea mays
293 <220> FEATURE:
294 <221> NAME/KEY: promoter
295 <222> LOCATION: (1)...(2715)
297 <221> NAME/KEY: 5'UTR
298 <222> LOCATION: (2716)...(2781)

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/047,593

DATE: 02/14/2002

TIME: 20:21:34

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\02142002\J047593.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date



OIPE

RAW SEQUENCE LISTING

DATE: 02/07/2002

PATENT APPLICATION: US/10/047,593

TIME: 10:11:12

Input Set : A:\1090D2SEQLIST.TXT

Output Set: N:\CRF3\02072002\J047593.raw

4 <110> APPLICANT: Crane, Edmund H. III
 5 Rice, Douglas A.
 7 <120> TITLE OF INVENTION: Maize NPR1 Polynucleotides and Methods
 8 of Use
 10 <130> FILE REFERENCE: 1090D2
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/047,593
 C--> 12 <141> CURRENT FILING DATE: 2002-01-15
 12 <150> PRIOR APPLICATION NUMBER: 60/130,692
 13 <151> PRIOR FILING DATE: 1999-04-23
 15 <150> PRIOR APPLICATION NUMBER: 09/551,778
 16 <151> PRIOR FILING DATE: 2000-04-18
 18 <160> NUMBER OF SEQ ID NOS: 6
 20 <170> SOFTWARE: FastSEQ for Windows Version 4.0

ERRORED SEQUENCES

Does Not Comply
 Corrupted Diskette Needed

200 <210> SEQ ID NO: 2
 201 <211> LENGTH: 621
 202 <212> TYPE: PRT
 203 <213> ORGANISM: Zea mays
 205 <400> SEQUENCE: 2
 206 Met Glu Pro Ser Ser Ser Ile Thr Phe Ala Ser Ser Ser Ser Tyr Leu
 207 1 5 10 15
 208 Ser Asn Gly Ser Ser Pro Cys Ser Val Ala Leu Pro Pro Pro Gly Pro
 209 20 25 30
 210 Pro Gln Thr Pro Pro Leu Pro Ala Gly Gln Gly Trp Gly Gly Gly Val
 211 35 40 45
 212 Ala Ala Ala Gly Ser Gly Gly Ser Val Glu Ala Val Ser Leu Asn Arg
 213 50 55 60
 214 Leu Ser Lys Asn Leu Glu Arg Leu Leu Leu Asp Pro Asp Leu Asp Cys
 215 65 70 75 80
 216 Ser Asp Ala Asp Val Asp Val Pro Asp Gly Gly Pro Pro Val Pro Ile
 217 85 90 95
 218 His Arg Cys Ile Leu Ala Ala Arg Ser Asp Phe Phe Tyr Asp Leu Phe
 219 100 105 110
 220 Ala Ala Arg Gly Arg Ala Gly Ala Ala Arg Gly Asp Ala Ala Ala Gly
 221 115 120 125
 222 Ala Gly Val Ala Ala Glu Gly Ala Ala Ser Gly Arg Pro Arg Tyr Lys
 223 130 135 140
 224 Met Glu Asp Leu Val Pro Ala Gly Arg Val Gly Arg Glu Ala Phe Gln
 225 145 150 155 160
 226 Ala Phe Leu Gly Tyr Leu Tyr Thr Gly Lys Leu Arg Pro Ala Pro Val

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/047,593

DATE: 02/07/2002

TIME: 10:11:12

Input Set : A:\1090D2SEQLIST.TXT

Output Set: N:\CRF3\02072002\J047593.raw

227		165		170		175
228	Asp Val Val Ser Cys Ala Asp Pro Val Cys His His Asp Ser Cys Pro					
229		180		185		190
230	Pro Ala Ile Arg Ser Ala Val Glu Leu Met Tyr Ala Ala Cys Thr Phe					
231		195		200		205
232	Lys Ile Pro Glu Leu Thr Ser Leu Phe Gln Arg Arg Leu Leu Asn Phe					
233		210		215		220
234	Val Asp Lys Thr Leu Val Glu Asp Val Ile Pro Ile Leu Glu Val Ala					
235	225		230		235	240
236	Ser His Ser Gly Leu Thr Gln Val Ile Asp Lys Cys Ile Gln Arg Ile					
237		245		250		255
238	Ala Arg Ser Asp Leu Asp Asp Ile Ser Leu Asp Lys Glu Leu Pro Pro					
239		260		265		270
240	Glu Ala Val Asp Glu Ile Lys Asn Leu Arg Lys Lys Ser Gln Thr Ala					
241		275		280		285
242	Asp Gly Asp Thr Phe Ile Ser Asp Pro Val His Glu Lys Arg Val Arg					
243		290		295		300
244	Arg Ile His Arg Ala Leu Asp Ser Asp Asp Val Glu Leu Val Lys Leu					
245	305		310		315	320
246	Leu Leu Asn Glu Ser Asp Ile Thr Leu Asp Asp Ala Asn Ala Leu His					
247		325		330		335
248	Tyr Ala Ala Ser Tyr Cys Asp Pro Lys Val Val Ser Glu Leu Leu Asp					
249		340		345		350
250	Leu Ala Met Ala Asn Leu Asn Leu Lys Asn Ser Arg Gly Tyr Thr Ala					
251		355		360		365
252	Leu His Leu Ala Ala Met Arg Arg Glu Pro Ala Ile Ile Met Cys Leu					
253		370		375		380
254	Leu Asn Lys Gly Ala Asn Val Ser Gln Leu Thr Ala Asp Gly Arg Ser					
255	385		390		395	400
256	Ala Ile Gly Ile Cys Arg Arg Leu Thr Arg Ala Lys Asp Tyr Asn Thr					
257		405		410		415
258	Lys Met Glu Gln Gly Gln Glu Ser Asn Lys Asp Arg Leu Cys Ile Asp					
259		420		425		430
260	Ile Leu Glu Arg Glu Met Met Arg Asn Pro Met Ala Val Glu Asp Ala					
261		435		440		445
262	Val Thr Ser Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu Leu Tyr					
263		450		455		460
264	Leu Glu Asn Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala Glu Ala					
265	465		470		475	480
266	Lys Val Ala Met Gln Ile Ala Gln Ala Asp Thr Thr Glu Glu Phe Gly					
267		485		490		495
268	Gly Ile Val Ala Val Ala Ala Ser Thr Ser Gly Lys Leu Arg Glu Val					
269		500		505		510
270	Asp Leu Asn Glu Thr Pro Val Thr Gln Asn Lys Arg Leu Arg Ser Arg					
271		515		520		525
272	Val Asp Ala Leu Met Lys Thr Val Glu Leu Gly Arg Arg Tyr Phe Pro					
273		530		535		540
274	Asn Cys Ser Gln Val Leu Asp Lys Phe Leu Glu Asp Asp Leu Pro Glu					
275	545		550		555	560

RAW SEQUENCE LISTING

DATE: 02/07/2002

PATENT APPLICATION: US/10/047,593

TIME: 10:11:12

Input Set : A:\1090D2SEQLIST.TXT

Output Set: N:\CRF3\02072002\J047593.raw

276 Gly Leu Asp Gln Phe Tyr Leu Gln Arg Gly Thr Ala Asp Glu Gln Lys
 277 565 570 575
 278 Val Lys Arg Met Arg Phe Cys Glu Leu Lys Glu Asp Val Leu Lys Ala
 279 580 585 590

E--> 280

Phe Ser Lys Asp Lys Ala Glu Gly Ser Val Phe Ser Gly Leu Ser Ser 595

600

450 <210> SEQ ID NO: 4

451 <211> LENGTH: 621

452 <212> TYPE: PRT

453 <213> ORGANISM: Zea mays

455 <400> SEQUENCE: 4

456 Met Glu Pro Ser Ser Ser Ile Thr Phe Ala Ser Ser Ser Ser Tyr Leu

457 1 5 10 15

458 Ser Asn Gly Ser Ser Pro Cys Ser Val Ala Leu Pro Pro Pro Gly Pro

459 20 25 30

460 Pro Gln Thr Pro Pro Leu Pro Ala Gly Gln Gly Trp Gly Gly Gly Val

461 35 40 45

462 Ala Ala Ala Gly Ser Gly Gly Ser Val Glu Ala Val Ser Leu Asn Arg

463 50 55 60

464 Leu Ser Lys Asn Leu Glu Arg Leu Leu Leu Asp Pro Asp Leu Asp Cys

465 65 70 75 80

466 Ser Asp Ala Asp Val Asp Val Pro Asp Gly Gly Pro Pro Val Pro Ile

467 85 90 95

468 His Arg Cys Ile Leu Ala Ala Arg Ser Asp Phe Phe Tyr Asp Leu Phe

469 100 105 110

470 Ala Ala Arg Gly Arg Ala Gly Ala Ala Arg Gly Asp Ala Ala Ala Gly

471 115 120 125

472 Ala Gly Val Ala Ala Glu Gly Ala Ala Ser Gly Arg Pro Arg Tyr Lys

473 130 135 140

474 Met Glu Asp Leu Val Pro Ala Gly Arg Val Gly Arg Glu Ala Phe Gln

475 145 150 155 160

476 Ala Phe Leu Gly Tyr Leu Tyr Thr Gly Lys Leu Arg Pro Ala Pro Val

477 165 170 175

478 Asp Val Val Ser Cys Ala Asp Pro Val Cys His His Asp Ser Cys Pro

479 180 185 190

480 Pro Ala Ile Arg Ser Ala Val Glu Leu Met Tyr Ala Ala Cys Thr Phe

481 195 200 205

482 Lys Ile Pro Glu Leu Thr Ser Leu Phe Gln Arg Arg Leu Leu Asn Phe

483 210 215 220

484 Val Asp Lys Thr Leu Val Glu Asp Val Ile Pro Ile Leu Glu Val Ala

485 225 230 235 240

486 Ser His Ser Gly Leu Thr Gln Val Ile Asp Lys Cys Ile Gln Arg Ile

487 245 250 255

488 Ala Arg Ser Asp Leu Asp Asp Ile Ser Leu Asp Lys Glu Leu Pro Pro

489 260 265 270

490 Glu Ala Val Asp Glu Ile Lys Asn Leu Arg Lys Lys Ser Gln Thr Ala

491 275 280 285

492 Asp Gly Asp Thr Phe Ile Ser Asp Pro Val His Glu Lys Arg Val Arg

493 290 295 300

494 Arg Ile His Arg Ala Leu Asp Ser Asp Asp Val Glu Leu Val Lys Leu

↑
 insert hard return

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/047,593

DATE: 02/07/2002

TIME: 10:11:12

Input Set : A:\1090D2SEQLIST.TXT

Output Set: N:\CRF3\02072002\J047593.raw

```

495 305          310          315          320
496 Leu Leu Asn Glu Ser Asp Ile Thr Leu Asp Asp Ala Asn Ala Leu His
497          325          330          335
498 Tyr Ala Ala Ser Tyr Cys Asp Pro Lys Val Val Ser Glu Leu Leu Asp
499          340          345          350
500 Leu Ala Met Ala Asn Leu Asn Leu Lys Asn Ser Arg Gly Tyr Thr Ala
501          355          360          365
502 Leu His Leu Ala Ala Met Arg Arg Glu Pro Ala Ile Ile Met Cys Leu
503          370          375          380
504 Leu Asn Lys Gly Ala Asn Val Ser Gln Leu Thr Ala Asp Gly Arg Ser
505 385          390          395          400
506 Ala Ile Gly Ile Cys Arg Arg Leu Thr Arg Ala Lys Asp Tyr Asn Thr
507          405          410          415
508 Lys Met Glu Gln Gly Gln Glu Ser Asn Lys Asp Arg Leu Cys Ile Asp
509          420          425          430
510 Ile Leu Glu Arg Glu Met Met Arg Asn Pro Met Ala Val Glu Asp Ala
511          435          440          445
512 Val Thr Ser Pro Leu Leu Ala Asp Asp Leu His Met Lys Leu Leu Tyr
513          450          455          460
514 Leu Glu Asn Arg Val Ala Phe Ala Arg Leu Phe Phe Pro Ala Glu Ala
515 465          470          475          480
516 Lys Val Ala Met Gln Ile Ala Gln Ala Asp Thr Thr Glu Glu Phe Gly
517          485          490          495
518 Gly Ile Val Ala Val Ala Ala Ser Thr Ser Gly Lys Leu Arg Glu Val
519          500          505          510
520 Asp Leu Asn Glu Thr Pro Val Thr Gln Asn Lys Arg Leu Arg Ser Arg
521          515          520          525
522 Val Asp Ala Leu Met Lys Thr Val Glu Leu Gly Arg Arg Tyr Phe Pro
523          530          535          540
524 Asn Cys Ser Gln Val Leu Asp Lys Phe Leu Glu Asp Asp Leu Pro Glu
525 545          550          555          560
526 Gly Leu Asp Gln Phe Tyr Leu Gln Arg Gly Thr Ala Asp Glu Gln Lys
527          565          570          575
528 Val Lys Arg Met Arg Phe Cys Glu Leu Lys Glu Asp Val Leu Lys Ala
529          580          585          590

```

E--> 530

Phe Ser Lys Asp Lys Ala Glu Gly Ser Val Phe Ser Gly Leu Ser Ser 595

532 <210> SEQ ID NO: 5

533 <211> LENGTH: 2715

534 <212> TYPE: DNA

535 <213> ORGANISM: Zea mays

537 <220> FEATURE:

538 <221> NAME/KEY: promoter

539 <222> LOCATION: (1)...(2715)

541 <400> SEQUENCE: 5

```

542 gcggccgcgt aatacgactc actatagggc gaagaattcg gatctccttc cttatttggc      60
543 gaagccgacc gttggcgctt tggagccggt gccgcaccgg acactgtccg gtgcacaccg      120
544 gacagtcagg tgcccccttc cgaccgttgg ctccggccacg tgtttcgcgc ggatcgcgcg      180
545 gcagaccggt ggccccgacc accggttggt caccggacag tccggtgcac accagacagt      240
546 ccggtgaatt atagccgtac gccgttaatc acttcccagag agcagcaagt tcgctgagc      300

```

600

↑
hand
return

RAW SEQUENCE LISTING

DATE: 02/07/2002

PATENT APPLICATION: US/10/047,593

TIME: 10:11:12

Input Set : A:\1090D2SEQLIST.TXT

Output Set: N:\CRF3\02072002\J047593.raw

```

547 cagcctggcg caccggacac tgtccggtga accaccggac agtccggtgc acccagtcag 360
548 agctgacttt ggctgaacaa agtcatcttt agttccaact tgatttttcc tgtttccagc 420
549 acttagacac aatacattag tctctaaaac aatgtattaa ttctgagaaa cataccttta 480
550 tacttggttt gtactttgtc caccatttaa cacttgggca cttgtgttg acactaaatc 540
551 accaaaatac ttagaaatgg cccaagggca catttccctt tcaacagtcc ggtgccacac 600
552 cggacagtcg ggtgacctct gacttctgtg ttctaacttc tgtcgcggca ctgtttcgca 660
553 ctatagcggt ttgcagtcga ccggttggcg acagagagcc attgctccgc tggctgaccg 720
554 gacagtccga tgaattatag cggascgcgc ctctgaattc ccgagtgtgg cctgtttgaa 780
555 gggcgccctg cctggtgcac cgaacaatgt atggtgcgcc aaaaatcagc aactcaagt 840
556 cctttgcttc attttttatt gtgtcgctaa ctggatttct ttttggttg tgttgaaact 900
557 tatgcacctg agataaatca catctagcca aactagttag tccatgtggt ttgtgttgat 960
558 cgtcaactac taaaatctat ttatagaaag tggttaaccc tatttccctt tcagcacact 1020
559 ctatatagtg cttgagacct cgacatgaag gtgtcctagg aagccaaggc tctcgcgtaa 1080
560 ggtcctcgac atgcaggacc ctaggccccg ttagaatggg gcttgtccat aagagagttg 1140
561 ggctctaaga tgcagtactg aactgtgcg tctgtcgttt ctttaataaag ttatagatga 1200
562 tgttttgcca acatctgatg atatgtcttg gtgcttacia aagccttgtt ttttatcttc 1260
563 ctttcgtctt aataaagatc catattacat ttatatttac tatgtcatat atataacctca 1320
564 ctatctcgaa gatacatctc gttgcggaag cataaggtag ctttgagggt aaagcttaga 1380
565 gcgacatgtg ggtgcaacaa acaaacatgg gggcacaaca cacctcacct catataacta 1440
566 atttggcttg caaatcgaga gtcccgtacg aaaagtactc gttgtctctt gaccaataa 1500
567 atcaaatata ccttcttaca caatttgtcc attttatatt tttcgtttcc aataacaaac 1560
568 tcaaagtgcac ttgttttttt ggacctttga cacatagcct ttaaagtaga tttcacaatt 1620
569 taagcttgtt atgtaaaaca aactaatctc gagagaggct gattgaggag aaagtctgcg 1680
570 gtcgatgatt caattggaag aaatcgatgt taaactgtc ttgttgatta aatttctagc 1740
571 ttcacacgtg cttgaacggc gtaggaagtg ttggaatttc ctttcttatg atttattaga 1800
572 gtagagtttt gttacagttt atttacggat tcattacggt atttattagg gatacgttga 1860
573 catataactt cagtctttct tttttaatag tcacaagaaa ctttcacaca cctactagga 1920
574 gtaacagaaa aacatggaca tattgatttt tgaaaaaaga aatattgaca gataaggtgt 1980
575 tggggaccgt agagactaga gaggatgagg acgacgccag gcagacgagc cttgccgatt 2040
576 gccgtcgacg tcacctggtt caggcgtcac ttgacgacgt atacaggggc acagggctca 2100
577 ggttttccct caaattgcgc cgaataactc gagatttctt ggattttttt acttgtttat 2160
578 tctattctcc ttccggcgcc tctctagtct attctccttc ctgcgtcagt cgtcgtcttc 2220
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580 ggactcttct tccacgattc cgttggacce ctaccgctcc tcagtcagtc ctgcgccctc 2340
581 ccagcaccgg ccaacaatcc ctcacgttat tccctgtage tactatgctg ccctcttgga 2400
582 tccctttttc acttgtctga gatttagcca ccgccggta ggaagaagaa ggggaagcac 2460
583 catattttct gttcctggcc tgacgcagcg ccggtgagat ttcagtcagg gatcggcaac 2520
584 gctgggagga ctgcgctgtg atttacgccg acttccgtgc cgctctagga agggtcacgt 2580

```

E--> 585

cgaggaggct tttgccgacg cggatttgcg tggagccagc caagcagagc gcagaattgg 2640gggtgttttg ccgtgcaaag

↑
Last
return

VERIFICATION SUMMARY

DATE: 02/07/2002

PATIENT APPLICATION: US/10/047,593

TIME: 10:11:13

Input Set : A:\1090D2SEQLIST.TXT

Output Set: N:\CRF3\02072002\J047593.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:280 M:360 E: Sequence data overflow, line data truncated, for SEQ ID#:2
L:280 M:252 E: No. of Seq. differs, <211>LENGTH:Input:621 Found:592 SEQ:2
L:530 M:360 E: Sequence data overflow, line data truncated; for SEQ ID#:4
L:530 M:252 E: No. of Seq. differs, <211>LENGTH:Input:621 Found:592 SEQ:4
L:585 M:360 E: Sequence data overflow, line data truncated, for SEQ ID#:5
L:585 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:14
L:585 M:252 E: No. of Seq. differs, <211>LENGTH:Input:2715 Found:2580 SEQ:5